

ASOS PROGRAM MANAGEMENT COMMITTEE

RECORD APMC 01-2

May 8, 2001

1. CONVENED - 9:00 AM

A meeting of the ASOS Program Management Committee (APMC) was convened by Chair Douglas Hess on May 8, 2001, in the Aerospace Building, Suite 850 - Conference Room A, 901 D Street S.W., Washington, DC.

Members participating:

Chair	- Douglas Hess
DOC	- Rainer Dombrowsky
	- Jamison Hawkins
DOD	- LtCol Terry Clark, USAF (for Col Feldman)
	- LTJG Stu Brown, USN
DOT	- Richard Thoma
	- Joseph Anderson
ASOS PI	- Richard Ahlberg Jr.
Ex. Sec.	- Robert Gillespie Sr.

Advisors and/or Guests included: J. Bradley, R. Bunevitch, K. Conaty, J. Dinges, L. Kozlosky, D. Mannarano, B. Moore, S. Reiley and A. Wissman from the DOC; E. Heusinger Jr., J. Humphrey and T. Kimbrell from the DOD; and R. Bamberger, B. Beatty, L. Gutierrez, H. Harris, S. Imbembo, J. Kranz, J. Miltenberger, B. Niederer, D. Potes, W. Quist, G. Strickler and B. Sutler from the DOT.

2. OPENING REMARKS

Mr. Hess recognized: LTJG Stu Brown, USN, as the newly designated alternate Department of the Navy PMC member - marking the Navy's renewed presence at the APMC; LtCol Terry Clark, USAF, seated for Department of Defense member Col Nathan Feldman, USAF, Air Weather Service; and Mr. Richard Thoma, FAA-AOP, replacing Mr. Ray Weimer as the FAA-AOP primary member.

Mr. Hess offered the "Corrected 4/20/01" ASOS PMC Meeting Minutes for comment and approval. The minutes were approved without comment.

3. ASOS SOFTWARE WORKING GROUP ACTIVITIES (Agenda Item 5)

Mr. Rainer Dombrowsky reported the ASOS Software Working Group (ASWG) had held two meetings since January 1, 2001, as well as additional subgroup meetings. During these months, the ASWG Charter and processes, including the submission and processing of ASOS software change requests, have been reviewed and revised. The ASWG has also addressed the process by which change requests will be prioritized for inclusion in future software releases. The priority will include an assessment of the cost/benefit of each proposed software change. Mr. Dombrowsky distributed copies of the Draft ASWG Charter noting it was close to its final revision. Attached to the Draft Charter is the process for software changes. A review and assessment of agency representation on the ASWG is scheduled to be addressed at the next ASWG meeting. Future meetings of the ASWG will be coupled with APMC or the Automated Observing Systems Group, Office of the Federal Coordinator for Meteorology (OFCM) meetings to help ensure the best utilization of time for personnel who must travel some distance to attend these meetings. Both video and telephone teleconferencing will continue to be made available for those who cannot physically attend the meetings. The ASWG will meet monthly or more frequently to assure timely processing of change requests. The ASWG software prioritizations and recommendations, as well as software load status reports, will be presented to the APMC at the next meeting.

4. ASOS CCB REPORT (Agenda Item 3)

As a summary of the accomplishment of the ASOS Configuration Control Board (CCB), Mr. Ahlberg distributed the ASOS Change Request Status Report dated May 7, 2001. The May 7, 2001, report is an update to the report distributed on April 20, 2001, via e-mail. When asked, the APMC had no questions, comments, or remarks regarding the report.

5. NWS PROGRAM STATUS BRIEFING (Agenda Item 4)

In opening remarks, Mr. Ahlberg stated the expected FY02 NWS budget cuts announced at the last APMC had not materialized. Consequently the program is moving ahead with schedules reflecting NWS funding at the requested \$5.1M. The Program Office schedules also incorporate the FAA budget estimates presented at the February 13, 2001, APMC meeting. The FAA priorities have been revised to reflect the Acquisition Control Unit (ACU) Processor Upgrade at priority 1, Dewpoint Sensor at priority 2, and the Ice-Free Wind Sensor at priority 3.

The All Weather Precipitation Accumulation Gage (AWPAG) evaluations are completed. The NWS is preparing for an acquisition strategy meeting on Friday, May 11, 2001, to consider acquisition options. The AWPAG acquisition will be addressed by the NWS which assesses this effort as priority 1, and is providing all the initial funding for acquisition and production (the FAA places AWPAG at priority 8). The AWPAG meteorological performance evaluations were completed during this past winter. Although the gauges worked well in rain, they did not meet the Government specification in freezing, frozen, and mixed precipitation. The Program Office has received clarification responses for the deficiencies identified in the technical proposals for the systems integration effort. The proposals were subsequently re-scored and reviewed for cost.

- Mr. Hess asked if progress was made identifying localities with cold weather environments conducive to testing ASOS instruments during the non-winter months in the United States. Mr. Ahlberg indicated some efforts had been made, but no formal contacts had been established. The DOD representatives were asked if they had access to any remote locations capable of supporting year-round winter testing. Neither knew of an accessible location with winter weather similar to the United States.

The ACU Processor Upgrade rehost continues to face delays as the result of pre-existing timing incompatibilities experienced when running the old software on the faster, more efficient ACU Processor Upgrade. Operationally, the areas impacted include: the synchronous driver for Automated Data Acquisition System (ADAS), the three-Data Collection Package (DCP) [the maximum configuration allowed], and the remote 2400 baud printer. Assuming these problems are resolved the week of May 7, 2001, the Systems Test is scheduled to commence on May 14, 2001, and conclude in July 2001; followed by the Operational Acceptance Test from late July to early September 2001; and the Production/Deployment decision in mid-September 2001.

The Dewpoint Sensor Replacement schedule has slipped. The larger portion of the slip is attributed to the sensor's dependency on having the ACU Processor Upgrade in place. Vaisala has also introduced a 6 week slip attributed to extending the scheduled Dewpoint Sensor Replacement qualification test. The previously reported Dewpoint Sensor Replacement performance problem was the result of the heater diagnostics being initiated too often, and has been corrected. The NWS has received the associated software revision at the Sterling, VA, test site for evaluation.

Revisions to the spending plan are necessary due to the ACU Processor Upgrade schedule delays. The Dewpoint Sensor production will be delayed from FY01 to FY02. The NWS will

purchase all its ACU Processor Upgrades and a portion of the FAA's in FY01, with the balance of the FAA ACU Processor Upgrades purchased in FY02. The Dewpoint Sensor Replacement will be purchased in the years FY02 through FY05. All NWS units will be purchased in FY02, while the FAA units will be purchased in the years FY02 through FY05 as governed by the FAA budget presented last quarter.

- Mr. Hess asked what was planned for continuing to support the existing system software once the new processor is fully deployed. Mr. Humphrey referenced discussions at the last meeting in which there was general agreement for maintaining systems without the new processors as "frozen in time" implying no software modifications. Software version 2.60 will be the last software load to be deployed for the existing processor. It was noted SMI is adding new sensors to the Navy systems, presenting a divergence from the Navy's Software release 2.4 baseline. The Navy indicated approximately 68 sites are baselined at Software release 2.4, and they are planning to follow the ASOS Program lead in updating the baseline with the new processor. Mr. Ahlberg reminded the Navy he has \$385K in Navy productions funds which could be used for product improvements. This amount is enough to buy 1 processor upgrade for each of the Navy systems and stock associated spares, but it is not enough to configure each system with redundant capabilities.

- In response to a question regarding the implementation of redundancy, Mr. Ahlberg indicated the Program Office was continuing to evaluate the benefits of redundancy, to help identify an appropriate mix of redundant sites. Most of the Navy and NWS ASOSs are class 2 systems requiring full redundancy, whereas about half of the FAA systems are class 2, the remainder are class 1 systems.

- The Air Force (Mr. Humphrey) stated it is planning to budget money to buy and install the Processor Upgrade for all the Air Force ASOSs.

- When asked, Mr. Ahlberg indicated there are no plans to modify the processor in the Data Collection Package (DCP), but DCP firmware will be modified to accommodate the new ACU Processor Upgrade. He noted the existing ACU Processor board and the DCP processor boards were similar. The Program Office will take advantage of this similarity to increasing their stock of replacement DCP processor boards with the ACU processor boards removed during the upgrade process.

- Mr. Ahlberg indicated his window of opportunity for including the Air Force and Navy in the procurement of the ACU Processor upgrade is the FY01-FY02 time frame. While the contract is "open delivery/open quantity" it also has a

\$5M ceiling. There is not enough capacity on the existing contract for everyone to implement a redundant configuration because it would exceed the \$5M cap. Because the components are Commercial Off The Shelf (COTS) components, it will be possible for the agencies to purchase these on their own.

- Mr. Hess requested the Navy present at the next APMC, information regarding the Navy's ASOS hardware and software configuration(s), and a general picture of what the Navy is doing in the surface observation area, as a means of informing the other agencies of the Navy's program.

ACTION ITEM 01-2.1 The Navy will provide an informational brief at the next APMC (8/7/2001) describing the current systems and technologies, and development of future surface hydro-meteorological observing systems in the Department of the Navy. Information will include a description of the ASOS hardware and software configuration(s) employed by the Navy.

STATUS: NEW 5/8/01

Mr. Ahlberg stated the acquisition schedules presented were revised to reflect the latest budget information, the FAA's re-prioritization of enhancements, and the technical difficulties experienced with the ACU Processor Upgrade and Dewpoint Sensor. The only effort lagging behind in schedule is the AWPAG. In light of the evaluation results, the AWPAG requires an acquisition strategy assessment to establish the appropriate course of action.

6. IMPLEMENTATION OF THE FREEZING DRIZZLE ALGORITHM

Mr. Hooper Harris, FAA/AFS-410, introduced himself as the FAA representative designated to speak to this action item. By way of background, he had received a briefing from FAA/ARW on the Freezing Drizzle algorithm and understands there are two issues associated with implementation. The first is the implementation of the software change. The second is implementation of the ACU Processor Upgrade which needs to occur prior to the software change. Target dates for the full implementation of the algorithm in the FAA fall in 1st or 2nd quarter 2002.

Mr. Harris was tasked to assess FAA Flight Standards implications for a Freezing Drizzle report from an ASOS. In response, FAA Flight Standards is interested in a Freezing Drizzle report if the technology will support making the report in a consistent and reliable fashion. The difficulty arises in the implementation of this capability, when only a portion of the sites scheduled for the modification have been modified and are operational, and the remainder are not yet operational. Under this scenario, a pilot making an airport approach and receiving an ASOS generated weather

report without freezing drizzle reported, may implicitly assume freezing drizzle is not present at the location. This assumption is flawed if the ASOS generating the report happens to be a system without the Freezing Drizzle report capability installed and enabled meaning freezing drizzle could be present, but not reported. The presence of a mix of fielded ASOSs (some with the Freezing Drizzle report capability, others without) may last as long as 9 months to 1 year. Consequently, the Aeronautical Information Manual (AIM) would need to be updated with information about the availability of Freezing Drizzle reports from the ASOS system.

The AIM annotates what the ASOS does. Currently, freezing drizzle is not one of the phenomena the AIM says ASOS can report. If there is going to be a mix of configurations as previously discussed, FAA Flight Standards needs to include information in the AIM to clarify the reporting inconsistencies from system to system. This could probably be done in the next AIM revision which requires submission by July 12, 2001. The revision would appear in January 2002 edition, roughly the time Freezing Drizzle reports are expected by the flight community.

A vehicle to convey this information to pilots and crew members is needed so they are aware some ASOSs can report Freezing Drizzle while others cannot. The information also needs to convey dates the pilots and crew can expect ASOSs to be capable of reporting Freezing Drizzle conditions. There are several options for disseminating this information. Industry works a lot faster than the FAA does, so this information could be circulated to the various operating organizations such as the Pilots Association and Aircraft Owners Association for dissemination among their members. Alternately, the FAA could send out a flier to all certified airmen, but it would be costly.

Mr. Harris concluded by stating the Freezing Drizzle report is supported, and is considered a valuable ASOS enhancement by the FAA Flight Standards group.

- Mr. Harris asked if the ASOS will annotate the absence of freezing drizzle reporting either in a remark or ASOS report identifying 'freezing drizzle not available'? After some discussion, Mr. Wissman offered an alternative approach to make the capability available at all sites simultaneously. It will be possible to have simultaneous loads on the system following the installation of the new processor. The software load with the freezing drizzle algorithm could be installed and placed in standby. Then, on a specified date, all sites could simultaneously switch on the capability by activating the standby software. This could be accomplished in the 3d Quarter of 2002.

- Mr. Harris stated any delay in turning on this new capability could be viewed as the FAA keeping safety enhancing technology out of the hand of pilots and crews. His concern with this approach is the possible ramifications should an air mishap occur which could have been prevented by activating the software when it was installed.
- Mr. Ahlberg stated the algorithm would be scheduled for software version 3.0 which could be released just prior to the winter after next (Winter 2002).
- Mr. Hess asked if, as stated in earlier PMCs, the FAA has concerns regarding the implications of Freezing Drizzle reports on airline operations and the requirement to deice. Mr. Harris articulated the FAA operations specification clearly associates the requirement for ground deicing with the actual experience of (encountering) ground icing not the reporting of icing conditions. With regard to any concerns for false alarms of freezing drizzle, the carrier and the pilot in command are responsible for dispatching the aircraft. If there is no freezing drizzle, no freezing rain, and no ground icing conditions, they do not have to deice the aircraft.

ACTION ITEM 01-2.2 The FAA (Mr. Whatley) will provide a message to the ASOS PMC Chair, Mr. Hess, prior to the next APMC meeting, conveying the FAA's endorsement and support for the implementation of the Freezing Drizzle Algorithm in ASOS.

STATUS: NEW 5/8/01

7. ASOS OPERATIONS

Mr. Wissman presented the status of ASOS monthly operations and maintenance for the three month period of January, February, and March 2001. System availability for All Airport Observations; NWS Regional; ASOS Airport Service Level A, B, and C; and Non-Augmented Airports Observation was presented.

Of note on the Alaskan Region Observation Availability chart, the altimeter availability did not meet the requirement. This was driven by 101 hours of "missing" observations the result of continued pressure pulsing effects created by the unusual dynamics of high winds over the local terrain at the Portage Glacier, AK, site. It is the quality control process of the algorithm which invalidates the observations, not an equipment failure. Improvements have been made at the site, but some pulsing effects remain.

In the Central Region Observation Availability chart, the Wind Sensor availability of 98% in February, 2001, falls

short of the 99% availability requirement. This is the result of two freezing rain events affecting 19 sites, yielding an average outage of a little less than 100 hours per site.

In the Pacific Region Observation Availability chart, the sub-99% availability for the Sky Cover was due principally to a ceilometer outage at Kailua-Kona, HI (KOA), lasting 77 hours. The particular failure encountered required a part shipment from Kansas City, MO, delaying repair.

Mr. Wissman briefed the following statistics:

- Mean Time Between Failure, by sensor
- Mean Time Sensor Recovery, by sensor
- Monthly Average Number of Trouble Tickets Per Site, recorded over the past 13 months
- Trouble Ticket Summary, March 2001
- ASOS Maintenance Restoration, three month period, as a percent of the requirements met by NWS region
- Maintenance Restoration Times Not Met, three month period, by month and NWS region
- Data Availability, Percentage of Missed Observations By Agency, thirteen month period
- Non-Augmented Sites, Observations (METAR) Not Available, three month period, as a percentage by month and NWS region
- Service Level A, B, and C Sites, Observations (METAR) Not Available, three month period, as a percentage by month and NWS region

Mr. Wissman noted the ASOS Mean Time Between Failure (MTBF) specification requirement of 2190 hours is not being met; the actual ASOS MTBF stands at approximately 250 hours. On the Mean Time Sensor Recovery (MTSR) slide, Mr. Wissman noted, while all sensors were restored within the required 24-hour period, the Alaskan Region System bar spikes just below the required recovery time line. This continues to be driven by the Alaska Region turning off their Tipping Buckets for a 3 to 4 months period during the winter season. Consequently, the computed total time to restore the tipping buckets presents an exaggerated display.

On the maintenance side, the ASOS Trouble Ticket Summary reflects approximately 5000 trouble tickets (on average, 6.43 trouble tickets per site) were generated in March 2001 for the 888 systems. This is the first time the number of trouble tickets generated for missed observations (Ob Available) was greater than the number for the Temperature Dewpoint Sensor.

The ASOS Maintenance Restoration goal of 95% was met by all except the Pacific Region. The February 2001 statistic is

associated with the OCONUS ceilometer outage at Kailua-Kona, HI, which took 77 hours to restore.

8. **APMC CHARTER**

Mr Hess lead the discussion on the adoption of the proposed draft APMC Charter. Since the last meeting, the charter had been modified to include: the Office of the Oceanographer of the Navy and the designated representative to participate as members of the APMC; the incorporation of changes to the FAA representation by way of membership changes; the addition of Appendix C, providing a format for the presentation of position and decision papers; and the addition of Appendix D, providing a information on the consensus decision making process.

Mr. Anderson, FAA, stated his concern regarding the members of the APMC being the approval authority for the APMC membership (themselves). Mr. Hess stated APMC members, at previous sessions, agreed they were in the best position to review and sign the charter as their agencies' representatives.

To expedite the approval (signature) process for the APMC Charter, the Secretariate will send a hard copy of the final charter with the signature page attached to the respective agency representatives. The representatives are to sign, date and return just the signature page to the Secretariat. Upon receipt of all the approving signatures, a composite page will be generated and issued as an integral part of the approved charter. If all signatures are received prior to the next APMC, the final copy of the Charter will be distributed at the next meeting. All members agreed to this process.

9. **OLD BUSINESS**

APMC00-3.1: Freezing Drizzle Implementation in Software Version 3.0. The FAA will provide a presentation on Freezing Drizzle implementation in ASOS software version 3.0 at the next APMC.

STATUS: NEW 7/25/00 CLOSED 5/8/01

AMENDED 11/21/00: The FAA is to make a definitive statement in their presentation identifying whether or not the FAA requires the reporting of freezing drizzle for present weather.

11/21/00: FAA coordination with the Flight standards Group is not complete. Presentation postponed to the next PMC.

2/13/01: FAA coordination with the Flight standards Group is not complete. Presentation postponed to the next PMC.

5/8/01: The FAA verbally endorsed the implementation of the Freezing Drizzle Algorithm in ASOS, and will follow through with a message (Ref APMC01-2.2).

APMC00-4.3 APMC members will review the APMC membership list and provide to the Secretariat any missing information or corrections. The revised list will be included with the next revision of the Draft APMC Charter.

STATUS: NEW 11/21/00; CLOSED 5/8/01

2/13/01: Awaiting membership information from the Navy and FAA. See Items APMC00-4.5 and 4.6, and APMC01-1.3.

5/8/01: Completed.

APMC00-4.5: The NWS will revise the APMC Charter to make it consistent with the NEXRAD PMC Charter and incorporate DOD's recommendation to define or bound the scope of APMC oversight. The revised charter will be distributed for review prior to the next APMC meeting.

STATUS: NEW 11/21/00; CLOSED 5/8/01

2/13/01: APMC completed its review of the DRAFT charter. Comments noted during the course of the PMC will be incorporated into the Charter, and the Charter will be redistributed to members for subsequent review. Awaiting membership information from the Navy and FAA.

5/8/01: Completed.

APMC00-4.6 The NWS will generate a letter for the APMC Chair's signature addressed to the Navy representative at OFCM with a copy to Ms. Johnson and Mr. Berkowitz, inquiring into the intent of the Navy to participate in both the ASOS program and the APMC.

STATUS: NEW 11/21/00; CLOSED 4/16/01

1/29/01: Letter was sent January 29, 2001. Awaiting response from Mr. Estabrooks, Assistant Federal Coordinator for USN/USMC Meteorological Affairs, CNO-N096 (N963C).

4/16/01: Mr. Estabrooks' response identifies LTJG Stu Brown, Naval Meteorology and Oceanography Command, Stennis Space Center, MS, as the Navy representative to the APMC.

APMC01-1.1: Mr. Ahlberg, NWS, will provide Col. Feldman with updated Ice Free Wind Sensor acquisition schedules and contract dates to support the preparation of funding requests and the 2004-2009 POM.

STATUS: NEW 2/13/01; CLOSED: 5/8/01

5/8/01: Acquisition schedules were included in the briefing. The Rough Order of Magnitude (ROM) costs per system were stated to be between \$5-6K. DOD confirmed the action item was complete with receipt of this information.

APMC01-1.2: Mr. Wissman, NWS, will review the total FAA O&M funding and determine whether their current level of funding is adequate to cover their portion of the projected ASOS O&M costs.

STATUS: NEW 2/13/01; CLOSED 5/8/01

5/8/01: Mr. Wissman stated he completed the review, coordinated with the FAA Program Office for funding requirements in FY02, and determined the FAA has adequate funding to support O&M throughout FY01.

APMC01-1.3: Col. Feldman, USAF, will provide an Air Force decision and staffing paper format to the Secretariat for consideration as the APMC's prescribed format for the Executive-level Decision Paper.

STATUS: NEW 2/13/01; CLOSED 3/23/01

3/23/01: Information received via e-mail from Mr. Humphrey, USAF, and included as Appendix C in the Draft APMC Charter.

APMC01-1.4: The Secretariat will notify the Chair and Secretariat of the ASOS CCB and ASOS Software Working Group of this development and request the Charters for each be (re)written for review and approval by the ASOS PMC.

STATUS: NEW 2/13/01

3/27/01: Mr. Gillespie notified Mr. Tim Ross (ASWG) and Mr. Lewis Kozlosky (ACCB) by e-mail, of the need to submit charters for approval by the APMC. Mr. Gillespie is awaiting finalization of the APMC membership in order to publish the signature page for incorporation into their charters.

5/8/01: Work in progress.

APMC01-1.5: Mr. Miltenberger, FAA, will provide to the Secretariat the names and information of the AOP staff to be assigned as the Primary and Alternate ASOS PMC members (currently listed as Ray Weimer and TBD).

STATUS: NEW 2/13/01; CLOSED 5/8/01

5/8/01: The name of the new FAA member was received and included in the Draft Charter.

10. NEXT MEETING

The Secretariat proposed date for the next APMC meeting on August 7, 2001, from 9:00 to 1:00, in Room 16246, Building SSMC2, National Weather Service Headquarters, Silver Spring, MD, was approved by all members.

11. EXECUTIVE SESSION

The Chair offered members the opportunity to convene an Executive Session. The committee members unanimously declined.

12. ADJOURN - The APMC adjourned at 11:18 a.m.